

CLAIMS

1. A concrete block comprising a mixture of reclaimed spent abrasive particles, ✓
Portland cement, a natural aggregate filler, and water, said mixture having the
approximate composition by weight of 10 to 15% of Portland cement, 65 to 80%
5 of the natural aggregate, 5 to 10% water, and 8 to 15% of the abrasive particles,
wherein the majority of the abrasive particles have a particle size of 50 mesh or
smaller.

2. The concrete block defined in claim 1 wherein 45% to 50% of the abrasive
10 particles have a size greater than 100 mesh.

3. The concrete block defined in claim 2 wherein 5% or less of the abrasive
particles have a size greater than 50 mesh.

4. The concrete block defined in claim 1 wherein at least 70% of the abrasion
15 particles have a size of 50 mesh or smaller.

5. The concrete block defined in claim 1 wherein the abrasive particles are
thermoset particulate media.

20

6. The concrete block defined in claim 5 wherein the thermoset particulate media is selected from the group consisting of urea, cast acrylic, melamine, polyester, epoxy, polyurethane, and phenol.

5 7. The concrete block defined in claim 1 wherein the Portland cement comprises approximately 12% by weight of the mixture.

8. The concrete block defined in claim 1 wherein the natural aggregate comprises approximately 78% by weight of the mixture.

10 9. The concrete block defined in claim 1 wherein the natural aggregate is comprised of approximately 75% limestone and 3% slag.

15 10. The concrete block defined in claim 1 wherein the abrasive particles comprise approximately 10% by weight of the mixture.

11. The concrete block defined in claim 1 wherein the filler is selected from the group consisting of pearlite, vermiculite, fly ash, and limestone.

20

12. A method of making a concrete block comprising the steps of: ✓

a) mixing about 8 to 15% by weight of reclaimed spent abrasive particles with 10 to 15% of Portland cement, 65 to 80% of natural aggregates, and a quantity of water to form a slurry mixture;

5 b) discharging said mixture into a block forming mold;

c) compressing said mixture in said mold to form a block structure;

d) removing the block structure from the mold; and

e) removing excess moisture from the block structure.

10 13. The method defined in claim 12 wherein the step of (e) is carried out free of externally applied moisture.

14. The method defined in claim 12 wherein step (a) comprises the step of mixing 12% by weight of Portland cement to form the slurry mixture.

15

15. The method defined in claim 12 wherein step (a) includes the step of mixing 10% of reclaimed spent abrasive particles.

20

16. The method defined in claim 12 in which 5 to 10% of water by weight is added in step (a) to form a slurry mixture.

17. The method defined in claim 12 wherein sufficient water is mixed in step (a) to provide approximately 8% moisture to the block formed by step (c).

18. The method defined in claim 12 including the step of mixing ground granulated blast furnace slag with the Portland cement.

19. The method defined in claim 12 wherein the natural aggregate includes limestone and sand.

20. The method defined in claim 12 wherein the abrasive particles are thermoset particulate media.